

Introduction to R

R and Spatial Data

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An Introduction to R

■ R - What is it?!

- *Why using R?*
- *History of R*
- *7 Levels of Learning*
- *R Studio*
- *Scripts*

■ Working with R

- *Function vs Objects*
- *Vectors*
- *Functions*
- *Operators*
- *Data Frames and Matrices*

■ First Calculations and Plots in R

- *Package Management*
- *Loading Data*
- *Data Management*
- *Loops and Restrictions*
- *Some Statistics*
- *Plotting in R*

■ R and Spatial Data

- *Load Spatial Objects*
- *Create Spatial Objects*
- *Plot Spatial Objects*

Overview

Spatial.Object	Explanation	Abbreviation	Slots	Function
Spatial Points	Object containing spatial points	sp	coords; bbox; proj4string	SpatialPoints()
Spatial Points Data Frame	Object containing Spatial points and corresponding data	spdf	data; coords.nrs; coords; bbox; proj4string	SpatialPointsDataFrame()
Spatial Grid Data Frame	Spatial grid object containing corresponding data (like elevation)	sgdf	data; grid; bbox; proj4string	SpatialGridDataFrame()
Spatial Lines	Spatial Lines List; containing	sl	data; lines	SpatialLines()

Spatial.Object	Explanation	Abbreviation	Slots	Function
	coordinates of lines			
Spatial Lines Data Frame	Spatial Lines Object and corresponding data; each line is one list	sldf	data; lines	SpatialLinesDataFrame()
raster	Raster object containing corresponding data (like elevation)	ras	file; data; legend; title; extent; rotated; rotation; ncols; nrows; crs; history; z	raster()